

Edouard Heitzmann

[Email](#) | [Website](#) | [GitHub](#)

Citizenship: French (EU passport holder) and American

Languages: French (*native*), English (*native*), Spanish (*fluent*), Arabic (*intermediate*)

EDUCATION

University of Colorado Boulder

Fall 2023 – Expected Spring 2027

PhD Candidate in Mathematics

- Advisor: Jeanne Clelland.
- Thesis: *GRAF-STV: Graph-based Risk-limiting Audit Framework for the Single Transferable Vote*.

Wesleyan University

Fall 2018 – Spring 2023

Bachelor of Arts in Mathematics and Physics

RESEARCH INTERESTS

Primary: Risk-Limiting Audits (RLAs) for ranked-choice and Single Transferable Vote (STV) elections; election security; computational social choice.

Secondary: Markov-chain ensemble methods for redistricting; algorithmic fairness; community detection in social choice; quantitative methods in election law.

PUBLICATIONS AND PREPRINTS

Audit Graphs: A Visual Tool to Measure the Stability of STV Elections

2026

- E. Heitzmann. Submitted to VOTING 2027 (Financial Cryptography and Data Security workshops) arXiv:2609.10887.

Graph-Based Audits for Meek Single Transferable Vote Elections

2026

- E. Heitzmann. Preprint, arXiv:2602.04527.

TALKS

Conference and seminar talks

A General Risk-Limiting Audit Framework for STV Elections

January 2027

AMS Special Session on Democracy, Voting, and Fairness, Joint Mathematics Meetings, Chicago

scheduled

Audit Graphs: A Visual Tool to Measure the Stability of STV Elections

May 2026

Structural Democracy Seminar, Cornell University [slides]

Departmental talks

The Mathematics of Redistricting: What They Did in Texas

February 2026

Graduate Student Seminar and Math Club, University of Colorado Boulder [slides]

Arrow's Theorem and Other Common Voting Rule Paradoxes

October 2025

Graduate Student Seminar, University of Colorado Boulder [slides]

Public and outreach talks

Drawing a Timeline for STV Implementation in Longmont

August 2026

Voting Methods Team state meeting, League of Women Voters of Colorado [slides]

WORKSHOPS AND CONFERENCES ATTENDED

The Mathematics of Elections, Fairness, and Representation <i>Banff International Research Station (BIRS) 5-day workshop, Banff, Alberta</i>	Mar.–Apr. 2026 <i>by invitation</i>
Workshop on Auditing and Verification for Election Security (WAVES) <i>Affiliated with Asiacrypt 2025, Melbourne</i>	December 2025
COMSOC 2025: 10th International Workshop on Computational Social Choice <i>TU Wien, Vienna</i>	September 2025
Voting Methods Modeling Workshop <i>Data and Democracy Lab, Cornell University</i>	June 2025 <i>by invitation</i>

SOFTWARE AND DATA

Author and Maintainer of <u>audit_graphs</u> <i>Python; reference implementation for STV RLAs</i> STV election logic, audit-graph construction, and RLA machinery; VoteKit-compatible data loading and formatting.	2026
Collaborator and Contributor to <u>VoteKit</u> <i>Python package for computational social choice research, Data and Democracy Lab</i> Primary author of the STV module; several large merged pull requests against the main branch.	2025 – Present
Data Curator for <u>election_data</u> and <u>roll_call_data</u> Ranked-choice election profiles and legislative roll-call votes, cleaned and consolidated from primary sources.	2026 – Present

TEACHING

Instructor of Record, Calculus I and II <i>University of Colorado Boulder</i>	Spring 2025, Spring 2026, Fall 2026
Teaching Assistant, Calculus I – III <i>University of Colorado Boulder</i>	Fall 2023 – Fall 2024
Assistant Instructor in Mathematics <i>Thrive Scholars Summer Academy</i>	Summer 2022, 2023, and 2024

AWARDS, FELLOWSHIPS, AND RESEARCH VISITS

Visiting Researcher , Monash University, hosted by Damjan Vukcevic Research supported by the Structural Democracy Fellowship <i>Fellowship awarded to Jeanne Clelland by the Brooks School of Public Policy, Cornell</i>	May–July 2026 Fall 2025
Summer Fellow , Data and Democracy Lab, Cornell University	Summer 2025
W. E. Briggs Teaching Excellence Award , CU Boulder	2024–25
Rice Prize in Mathematics , Wesleyan University	May 2023
High Honors in Mathematics , Wesleyan University	May 2023
Rae Shortt Prize in Mathematics , Wesleyan University	May 2022

SERVICE

Speaker of the Assembly, Graduate and Professional Student Government <i>University of Colorado Boulder</i>	2026–2027
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SKILLS

Programming: Python (scientific stack), Rust.
Tools: Linux, Git, L^AT_EX; agentic AI coding assistants with test- and review-based verification of generated code.